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ABSIRACT

THIS STUDY IS CONCERNED WITH THE PREDICTION OF COLLEGE SUCCESS IN A GROUP OF PRIMARILY LOW SOCIO-ECONOMIC STATUS (SES) MEXICAN-AMERICAN YOUTH. A TOTAL OF 32 COLLEGE FRESHMEN PARTICIPATED, MOST OF WHOM WERE POOR AND HAD BELOW AVERAGE ACADEMIC AVERAGES AS MEASURED BY HIGH SCHOOL GRADE POINT AVERAGE. SELECTED SETS OF COGNITIVE AND PERSONALITY MEASURES ARE USED AS PREDICTOR VARIABLES, AND THE CONCEPT OF COLLEGE SUCCESS WAS ENLARGED TO INCLUDE STUDENT RATINGS BY PROFESSORS AND STUDENT SELF-RATINGS, IN ADDITION TO COLLEGE GRADE POINT AVERAGE. THE SUCCESS MEASURES REPRESENT ONLY THE STUDENT'S FIRST SEMESTER IN COLLEGE AND THEREFORE THE RESULTS PRESENTED ARE INDICATIVE RATHER THAN CONCLUSIVE. THEY INCLUDE: (1) COGNITIVE MEASURES, SUCH AS THOSE IN THE ABILITY CLUSTER USED IN THIS STUDY, ARE HIGHLY QUESTIONABLE PREDICTORS OF FUTURE COLLEGE SUCCESS IN MINORITY POPULATIONS; (2) NON-INTELLECTIVE MEASURES, SUCH AS PERSONALITY VARIABLES, MAY BE USEFUL AS PREDICTORS IN MINORITY POPULATIONS AND FURTHER EMPHASIZE THE NEED FOR RESEARCH IN THIS AREA. (KJ/AUTHOR)

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# Predicting College Success Among Minority Youth: An Analysis in Highly Selective Colleges

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(Western Psychological Association, Vancouver, June 20, 1969)

This study is concerned with the prediction of college success in a group of primarily low SES Mexican-American youth. Selected sets of cognitive and personality measures are used as predictor variables, and the concept of college success is enlarged to include student ratings by the professor and student self-ratings, in addition to college grade point average. The success measures represent only the student's first semester in college and therefore the results presented here are indicative rather than conclusive.

The sample consists of thirty-two college freshmen, predominantly Mexican-American, who were admitted to the Claremont Colleges through the Program of Special Directed Studies. For the most part the students are poor and have below average academic credentials as measured by high-school grade point average and standardized tests for entering Claremont freshmen. A more complete description of the population may be

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found in the PSDS Technical Report: Descriptive Statistics.

College success, prior to graduation, has traditionally been measured solely by grade point average. This study seeks to expand the definition of success to include professors' evaluations of student performance in comparison to other students in the class, student self-evaluation of his overall classroom performance in comparison with other classmates.*

Since students participating in special admissions programs have frequently experienced a series of academic failures or under-achievements with respect to their potential prior to being accepted in the program, the authors feel that it is important to assess the student's perception of his own success. Only those students who feel that they are experiencing some measure of success are likely to continue in the program. Also included in the study are professor evaluations,

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*Dr. Stuart Oskamp of Claremont Graduate School is currently working on expanding the meaning of college success to include social and psychological success as well. See Description of a Compensatory College Education Program for the Disadvantaged and its Associated Research and Evaluation Program by Spuck, D.W., Stout, R.T., Oskamp, S., Friedlander, P. and Seric, K.

since professors are experiencing student behaviors which do not lend themselves directly to inclusion in a course grade, but which are indicative of the student's success in college.

The criterion measures were gathered after the PSDS students had completed their first semester of college work. The GPA was computed from official college records. Professors were asked to compare each PSDS student they had in their class to the other members of the class on a 1 - 5 scale. The specific question asked was, "In comparison to others in the class, how would you describe this student's overall performance? (Low, below-average, average, above-average, high.)" These responses were then averaged over all classes to obtain the professor's rating of student success.

The students were asked essentially the same question, "In comparison to others in the class, how would you describe your overall performance? (Low, below average, average, above average, high.)" These were averaged over all classes for each student to obtain the student's self-evaluation of success. A further self-evaluation was solicited of the student with respect to success in the PSDS program. The question was asked, "In your opinion, what has been your degree of success in the PSDS program so far? (Very little, little, some, much, very much.)" These four variables represent the multivariate success cluster used as criterion in this analysis.

Two clusters of variables are used as predictors: an ability set and a personality set. The ability set consists of high school grade point average, School and College Ability Test Verbal, School and College Ability Test Mathematics, Cattell Culture Fair IQ Test, California Test of Mental Maturity Language IQ, and the California Test of Mental Maturity Non-Language IQ. The personality set consists of four variables from the Omnibus Personality Inventory: estheticisim, complexity, autonomy, and religious orientation.

All of the measures making up the three predictor clusters were gathered prior to the start of the fall semester, 1968. The high school grade point average was computed from high school transcripts. The Omnibus Personality Inventory, California Test of Mental Maturity, the School and College Ability Test and the Cattell Culture Fair IQ Test were all administered during the PSDS orientation program held late in the summer 1968.

Canonical Correlation analysis, a multivariate statistical technique, was used to investigate the nature of the relationships existing between the two sets of predictor variables and the criterion measures. The output for this analysis yields means, standard deviations, Pearson product-moment correlations, and canonical relationships. Significance of the canonical relationships is determined from an exact probability test based on Wilks' lambda criterion.

Table I of the handout gives the intercorrelations of the success measures. The means and standard deviations are along the diagonal. The average grade point average received during the first semester was 1.98 on a four point scale, essentially a C average and presumably a little below that of the average regularly admitted freshman. The mean professor evaluation (PE) is 2.27. If we transform the grade point average to the same 1-5 scale used for the professor evaluations, we see that the evaluations are considerably lower than the grade point average. Evidently the grades received in college reflect more than a comparison of a given student's overall performance with other members of the class, and/or the overall comparison reflects more than grade point average. The correlation between the two accounts for less than 20% of the total variation. This is considered justification for separation of these two measures as indicators of student success.

The student rated his own overall class performance (SE) as slightly below that of the average student in the class. But when one considers that an average Claremont student has about a 630 SAT Verbal score and a 620 SAT Math score, this is a rather remarkable comparison. Most students in the PSDS program apparently feel that they are able to compete satisfactorily with the regularly admitted Claremont freshman. The student self-rating in the PSDS program (SP) has a mean of 3.75 on a 1-5 scale, which indicates that most students feel that they are experiencing considerable success in the program.

Several recent studies indicate that variables such as those included in the ability cluster are as valid predictors of academic success for minority populations as they are for white (Boney, 1966; Stanley and Porter, 1967; and Cleary, 1968). Fishman, et. al., warns, however, that the predictive validity may be quite different for minority populations than for those on which most measures were standardized.

The need for this warning was confirmed on a black population by Funches. This study seems to confirm the finding of Funches, that the predictive validity of these ability indices of future college success is highly questionable. The population investigated here is primarily Mexican-American; the populations investigated in the studies mentioned earlier were primarily black, and there may be differences in the predictive validity of these variables between the two populations. It is clear from this data, however, that none of the variables in the ability cluster are related in a significant positive way with any of the success measures, and are therefore not useful as predictors.

Four variables from the Omnibus Personality Inventory: estheticism, complexity, autonomy and religious orientation were entered into the canonical analysis with the success measures. The results are given in Table III. This table indicates that three of the bivariate correlations are significant beyond the .05 level. Student ratings on the estheticism

scale are significantly related to their self-comparison to other students in their classes. The student who feels that he is sensitive and that he has diverse interests in artistic matters and activities tends to rate himself higher in overall performance than other class members, while those who do not view themselves as having such diverse esthetic interests tend to view themselves as being less successful in comparison to other class members.

A second significant relationship is that between complexity and the student's rating of success in the PSDS program. This indicates that those who feel that they take an experimental and flexible orientation and that they would rather take a chance, tend to view themselves as being more successful in PSDS than those who do not like ambiguities and tend to prefer known situations.

The last significant bivariate correlation between these two variable sets relates religious orientation inversely to grade point average. Those who believe in the existence of God, who consider themselves to be religious and who prefer the company of religious people, tend to be those who obtained higher grade point averages, while those who are skeptical of traditional religious beliefs and are inclined to reject most of them are those who received lower grade point averages. This relationship is the inverse of what one would expect of the regularly admitted freshman, as

shown, for example, by Heist and Yonge in the OPI manual.

One significant multivariate relationship exists between these two sets of variables; this is shown at the bottom of Table III. An investigation of the weights involved indicates that the student who is independent in his thinking and who also views himself as having a flexible and experimental approach to problems is the student who feels that he is succeeding most in the PSDS program and who is in fact receiving higher grades than his counterpart, who views himself as dependent and uncomfortable in new situations. It is clear from the canonical weights that complexity and the student's perception of his success in PSDS contribute most to this multivariate relationship. None of the other three canonical relationships is significant at the .05 level.

Goodstein, et. al. in the final report of their study, while not reporting any particular personality variables related to college success, suggested the need for continued exploration in this area. The results reported here indicate the existence of significant bivariate and multivatiate relationships between personality variables and success measures in minority populations and therefore support the need for continued research.

This study indicated that cognitive measures, such as those in the ability cluster reported here, are highly questionable predictors of future college

success in minority populations. On the other hand non-intellective measures, such as the personality variables used here, may be useful as predictors in minority populations and further emphasize the need for research in this area. This research project is an ongoing endeavor, and it is hoped that more positive conclusions will be reached as the present PSDS group proceeds through college and as new students enter the program.

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TABLE I

Intercorrelations of Success Measures

| | GPA | PE | SP | SE |
|---|---|---|---|---|
| GPA | 1.98<br>.81 | .44** | -.01 | .47** |
| PE | | 2.27<br>.77 | .15 | .44** |
| SP | n=32 | | 3.75<br>.92 | .42* |
| SE | | | | 2.82<br>.57 |

* Significant at the .05 level
** Significant at the .01 level

Means and standard deviations are on diagonal

TABLE II

Ability - Success Correlations

| | HSGPA | SCATV | SCATM | CIQ | LIQ | NLIQ | GPA | PE | SP | SE |
|---|---|---|---|---|---|---|---|---|---|---|
| HSGPA | 2.78<br>.42 | .08 | .09 | .21 | -.09 | .24 | .15 | .26 | -.36* | -.05 |
| SCATV | | 289.59<br>13.09 | .34* | .43* | .58** | .34* | .05 | .19 | -.10 | -.04 |
| SCATM | | | 293.59<br>19.78 | .40* | .27 | .55** | -.03 | -.11 | -.11 | -.32 |
| CIQ | | | | 104.66<br>13.38 | .28 | .46** | -.07 | -.12 | -.31 | -.21 |
| LIQ | n=32 | | | | 101.56<br>11.96 | .29 | -.17 | -.01 | .14 | -.19 |
| NLIQ | | | | | | 100.00<br>14.99 | -.07 | .04 | -.30 | -.30 |

No significant ($p \leq .05$) canonical relationships exist.

TABLE III

OPI - Success Correlations

| | ES | CO | AU | RO | GPA | PE | SP | SE |
|---|---|---|---|---|---|---|---|---|
| ES | 51.53<br>8.83 | -.11 | -.07 | -.04 | .17 | .16 | .08 | .42* |
| CO | | 53.16<br>12.41 | .09 | -.05 | .20 | .23 | .53** | .18 |
| AU | | | 55.00<br>8.23 | .43* | -.16 | -.16 | .33 | .06 |
| RO | | | | 55.56<br>7.73 | -.38* | .04 | .14 | -.11 |

Significant Canonical Relationships

| $P \leq$ | $R^2$ | ES | CO | AU | RO | GPA | PE | SP | SE |
|---|---|---|---|---|---|---|---|---|---|
| .02 | .41 | .25 | .84 | .36 | -.09 | .35 | .01 | .93 | -.11 |